

# PATENT COOPERATION TREATY

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### INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)



Applicant's or agent's file reference P200200431 WO	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/DK 03/00163	International filing date (day/month/year) 13.03.2003	Priority date (day/month/year) 13.03.2002
International Patent Classification (IPC) or both national classification and IPC H04L12/28		
Applicant BEAMTRUST AS		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.
  - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand  10.10.2003	Date of completion of this report  21.06.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Weinmiller, J  Telephone No. +31 70 340-3884  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/DK 03/00163**

**1. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-27 as originally filed

**Claims, Numbers**

1-19 received on 10.02.2004 with letter of 09.02.2004

**Drawings, Sheets**

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☒ the claims, Nos.: 20-22
- ☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-19
Inventive step (IS)	Yes: Claims	
	No: Claims	1-19
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: US-A-5 677 955 (ANDERSON MILTON M ET AL) 14 October 1997 (1997-10-14)  
D2: EP-A-0 986 275 (SWISSCOM AG) 15 March 2000 (2000-03-15)

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 10, 17 is not new in the sense of Article 33(2) PCT.

The document **D1** discloses (the references in parentheses applying to this document):

A method of processing an electronic payment cheque (see D1, column 3, line 25-26) that relates to a transfer of an amount of money from an account of a first user in a first banking institute to an account of a second user in a second banking institute (see D1, column 3, line 4-5),  
which processing includes generating digital signatures (see D1, column 3, line 5-6) by means of asymmetric encryption using an asymmetric key pair comprising a private key (see D1, column 3, line 62) and a public key (see D1, column 3, line 8),  
characterized in that, the method comprises the following steps:  
in a first SIM card of the first user (see D1, column 4, line 6-7), creating an electronic payment cheque and signing the electronic payment cheque with a first signature generated by means of a first private key of a first asymmetric key pair (see D1, column 7, line 50-55), which first private key is generated on the first SIM card (see D1, column 14, line 36-38) and resides on the first SIM card hosted by a first mobile equipment,  
via the first mobile equipment hosting the SIM card of the first user, transmitting the signed electronic payment cheque to a second SIM card hosted in a second mobile equipment of the second user (see D1, column 7, line 62-64),  
in the second SIM card, signing the electronic payment cheque (see D1, column 8, line 4-8), which has been signed with the first signature, with an additional second signature generated on the second SIM card by means of a second private key of a second asymmetric key pair, which second private key is generated on the second SIM card and resides on the second SIM card hosted by the second mobile equipment,  
transmitting the electronic payment cheque signed with the first and the second digital signatures from the second mobile equipment to a central hub (see D1, column 8, line 12-17), which central hub is in communication with the first and the second banking institutes,

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in the central hub, initiating a deposit of the amount of money in the electronic payment cheque into the account of the second user by initialising a verification of the second signature at the banking institution of the second user (see D1, column 8, line 20-21) and a verification of the first signature at the banking institution of the first user (see D1, column 8, line 20-21).

The independent claim 1 has been amended by adding the features of previous claim 2, that the first and respective the second private key are generated on the first and respective the second SIM card. However D1 also discloses the generation of the private key on the card itself, even explicitly giving the very same reasoning therefore, that the private key never has to leave the card for security reasons (see D1, column 5, line 65 - column 16, line 1).

The arguments of the applicant are not convincing. The applicant claims that in D1 the card used is not a SIM card, as claimed in the application, but instead is merely a smart card, smart disk or PCMCIA-card. However in D1 it is only defined a "portable token" which may take the form of smart card, smart disk or PCMCIA-card. A SIM-card is thus within the disclosure of D1. Even the difference, as claimed by the applicant, of a SIM card as opposed to the cards used in D1, in that a SIM-card comprises a unique identity number of the user is disclosed in D1, see column 4, line 5-6. Further, in D1 in column 4, line 1-25, the characteristics of the smart card are extensively elaborated which directly match the characteristics generally known from a SIM cards. Also the characteristics of the card to prevent tampering, corresponding to the arguments of the applicant, are extensively elaborated in D1, see column 11, line 34-37; column 15, line 65 - column 16, line 1; column 21, line 3-15. The smart card described in D1 has thus all characteristics and advantages, which the applicant claims for his SIM-card. The feature of defining use of SIM-cards is thus merely one of several straightforward possibilities and is suggested and anticipated by the disclosure of D1.

The same reasoning applies, *mutatis mutandis*, to the subject-matter of the corresponding independent claims 10 and 17, which therefore are also considered not new.

Dependent claims 2-9, 11-16, 18-19 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step, see documents D1 (for claims 2, 6, 7, 8, 11, 15, 19: see D1, column 7, line 14 - column 8, line 59) or document D2 (for claim 3, 4, 5, 9, 12, 13, 14, 16, 18: see D2, Paragraphs 0008, 0010, 0013-0016) and the corresponding passages cited in the search report.

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**Re Item VII**

**Certain defects in the international application**

Although claims 1, 10, 17 have been drafted as separate independent claims, they appear to relate effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-matter for which protection is sought. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

EPO - DG 1

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16.02.2004

CLAIMS (amended):

(100)

1. A method of processing an electronic payment cheque that relates to a transfer of an amount of money from an account of a first user in a first banking institute (500) to an account of a second user in a second banking institute (550), which processing includes generating digital signatures by means of asymmetric encryption using an asymmetric key pair comprising a private key and a public key, characterized in that, the method comprises the following steps:
- in a first SIM card (101a) of the first user, creating an electronic payment cheque and signing the electronic payment cheque with a first signature generated by means of a first private key of a first asymmetric key pair, which first private key is generated on the first SIM card (101a) and resides on the first SIM card (101a) hosted by a first mobile equipment (101b),
- via the first mobile equipment (101b) hosting the SIM card (101a) of the first user, transmitting the signed electronic payment cheque to a second SIM card (102a) hosted in a second mobile equipment (102b) of the second user,
- in the second SIM card (102a), signing the electronic payment cheque, which has been signed with the first signature, with an additional second signature generated on the second SIM card (102a) by means of a second private key of a second asymmetric key pair, which second private key is generated on the second SIM card (102a) and resides on the second SIM card (102a) hosted by the second mobile equipment (102b),
- transmitting the electronic payment cheque signed with the first and the second digital signatures from the second mobile equipment (102b) to a central hub (300), which central hub (300) is in communication with the first and the second banking institutes (500, 550),

in the central hub (300), initiating a deposit of the amount of money in the electronic payment cheque into the account of the second user by initialising a verification of the second signature at the banking institution (550) of the second user and a verification of the first signature at the banking institution of the first user (500).

2. Method according to claim 1, wherein the transmittal of the signed electronic payment cheque from the first mobile equipment (101b) hosting the SIM card (101a) of the first user to the second SIM card (102a) hosted in a second mobile equipment (102b) of the second user, is performed via a digital mobile telephone system.

3. A method according to claim 1 or 2, wherein the signed payment cheque is transmitted as a Short Message by means of the Short Message Service system over the GSM system.

4. A method according to claim 1 or 2, wherein the signed payment cheque is transmitted as a Short Message by means of Ir, Bluetooth or Wi-Fi standards.

5. A method according to any of the claims 1 to 4, wherein creating of an electronic payment cheque comprises indicating a telephone number associated to the second SIM card (102a), an amount to be transferred and an index to the account, wherefrom the amount should be withdrawn.

6. A method according to any of the claims 1 to 5, wherein the method further comprises:

via the first mobile equipment (101b), prompting the first user to confirm creation of an electronic payment cheque, which prompting is initiated at the first SIM card (101a) hosted by the first mobile equipment (101b).

7. A method according to claim 6, wherein the conformation comprises entering of a PIN-RSA number.



8. A method according to any of the claims 1 to 7, wherein the encrypted electronic payment cheque is transmitted via a message proxy in the central hub (300).

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9. A method according to claim 8, wherein the encrypted electronic payment cheque at the message proxy is converted to an SMS Point-to-point data download message, which subsequently is transmitted to the second SIM card hosted by the second mobile equipment.

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10. A method of issuing an electronic payment cheque that relates to a transfer of an amount of money from an account of a first user in a first banking institute (500) to an account of a second user in a second banking institute (550), which issuing includes generating a digital signature by means of asymmetric encryption using an asymmetric key pair comprising a private key and a public key, characterized in that, the method comprises the following steps:

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in a first SIM card (101a) of the first user, creating an electronic payment cheque and signing the electronic payment cheque with a first signature generated by means of a first private key of a first asymmetric key pair, which first private key the first private key is generated on the first SIM card (101a) and resides on the first SIM card (101a) hosted by a first mobile equipment (101b),

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via the first mobile equipment (101b) hosting the SIM card (101a) of the first user, transmitting the signed electronic payment cheque to a second SIM card (102a) hosted in a second mobile equipment (102b) of the second user.

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11. Method according to claim 10, wherein the transmittal of the signed electronic payment cheque from the first mobile equipment (101b) hosting the SIM card (101a) of the first user to the second SIM card (102a) hosted in

a second mobile equipment (102b) of the second user, is performed via a digital mobile telephone system.

5 12. A method according to any of the claims 10 or 11, wherein the signed payment cheque is transmitted as a Short Message by means of the Short Message Service system over the GSM system.

10 13. A method according to any of the claims 10 to 12, wherein the signed payment cheque is transmitted as a Short Message by means of Ir, Bluetooth or Wi-Fi standards.

15 14. A method according to any of the claims 10 to 13, wherein creating of an electronic payment cheque comprises indicating a telephone number associated to the second SIM card (102a), an amount to be transferred and an index to the account, wherefrom the amount should be withdrawn.

15. A method according to any of the claims 10 to 14, wherein the signed electronic payment cheque is transmitted via a message proxy.

20 16. A method according to claim 15 wherein the signed electronic payment cheque at the message proxy is converted to an SMS Point-to-point data download message, which subsequently is transmitted to the second SIM card (102a) hosted by the second mobile equipment (102b).

25 17. A method of depositing a received electronic payment cheque that relates to a transfer of an amount of money from an account of a first user in a first banking institute (500) to an account of a second user in a second banking institute (550), which processing includes generating digital signatures by means of asymmetric encryption using an asymmetric key pair comprising a  
30 private key and a public key, characterized in that, the method comprises the following steps:

5 in the second SIM card (102a), signing the received electronic payment cheque, which has been signed with a first signature, with an additional second signature generated on the second SIM card (102a), by means of a second private key of a second asymmetric key pair, which second private key is generated on the second SIM card (102a) and resides on the second SIM card (102a) hosted by the second mobile equipment (102b),

10 transmitting the electronic payment cheque signed with the first and the second digital signatures from the second mobile equipment (102b) to the central hub (300), which central hub (300) is in communication with the first and the second banking institutes (500, 550),

15 in the central hub (300), initiating a deposit of the amount of money in the electronic payment cheque into the account of the second user by initialising a verification of the second signature at the banking institution (550) of the second user and a verification of the first signature at the banking institution (500) of the first user.

20 18. A method according to claim 17, wherein the signed received payment cheque is transmitted as a Short Message by means of the Short Message Service system over the GSM system.

25 19. A method according to any of the claims 17 or 18, wherein the signed received electronic payment cheque is transmitted via a message proxy in the central hub (300).